NOAA/NWS/OHRFC

Kentucky Agriculture Science and Monitoring Committee

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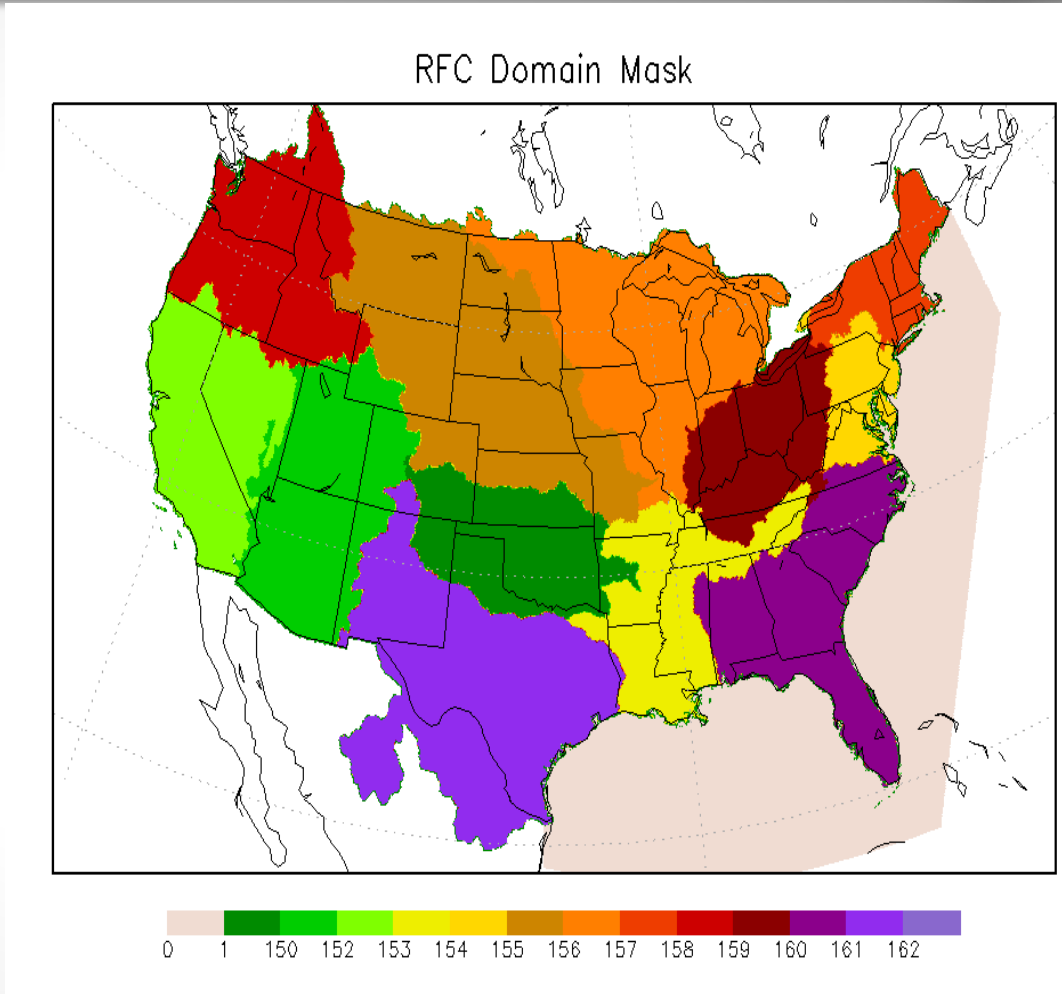
NOAA/NWS/River Centers

The Ohio River Forecast Center covers all of Kentucky except the far west.

NOAA/National Weather Service RFCs have transitioned from flood centers to water resource centers



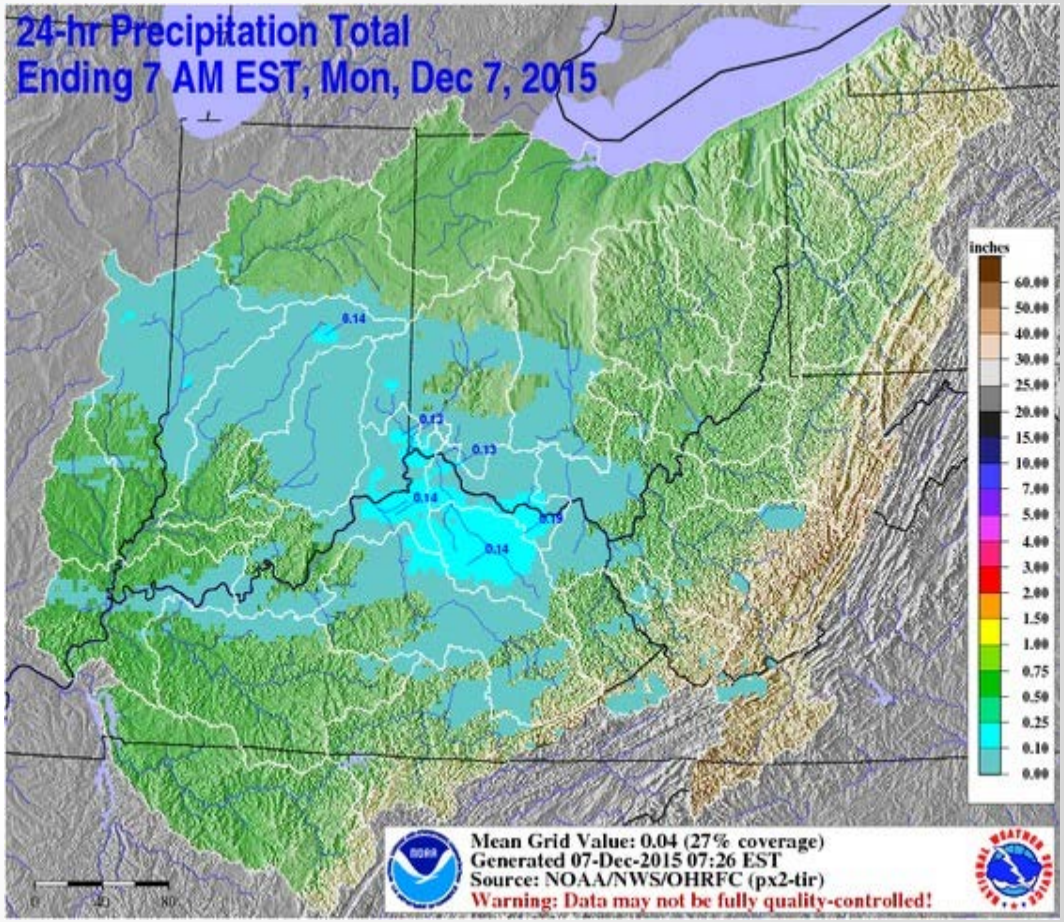
http://weather.gov/ohrfc

Precipitation

4km resolution hourly precipitation grids

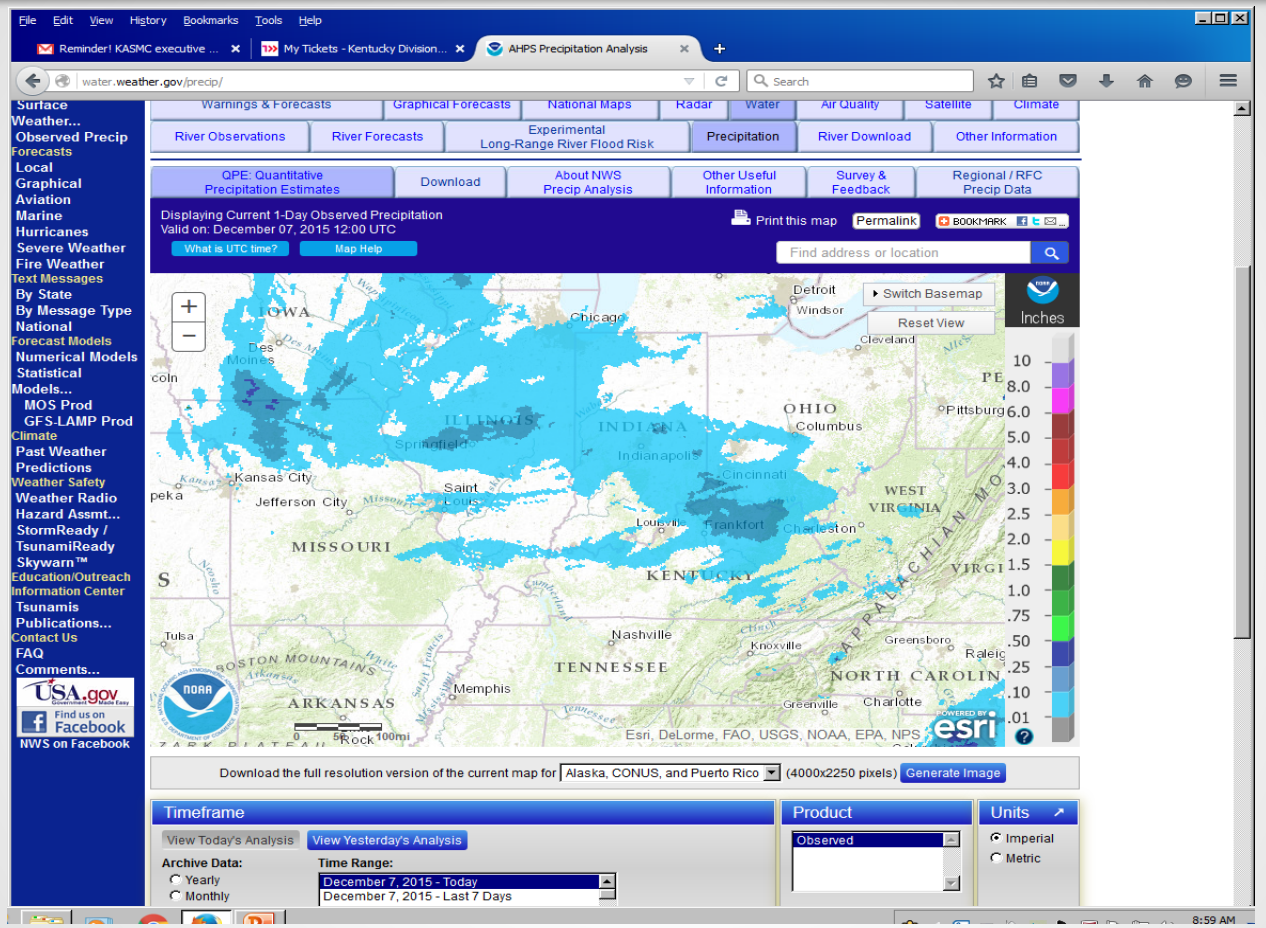
Includes radar, rain gages from 1-24 hour durations.

Team of meteorologists at each RFC that QC precipitation



http://weather.gov/ohrfc

National 24-hr Grids Available

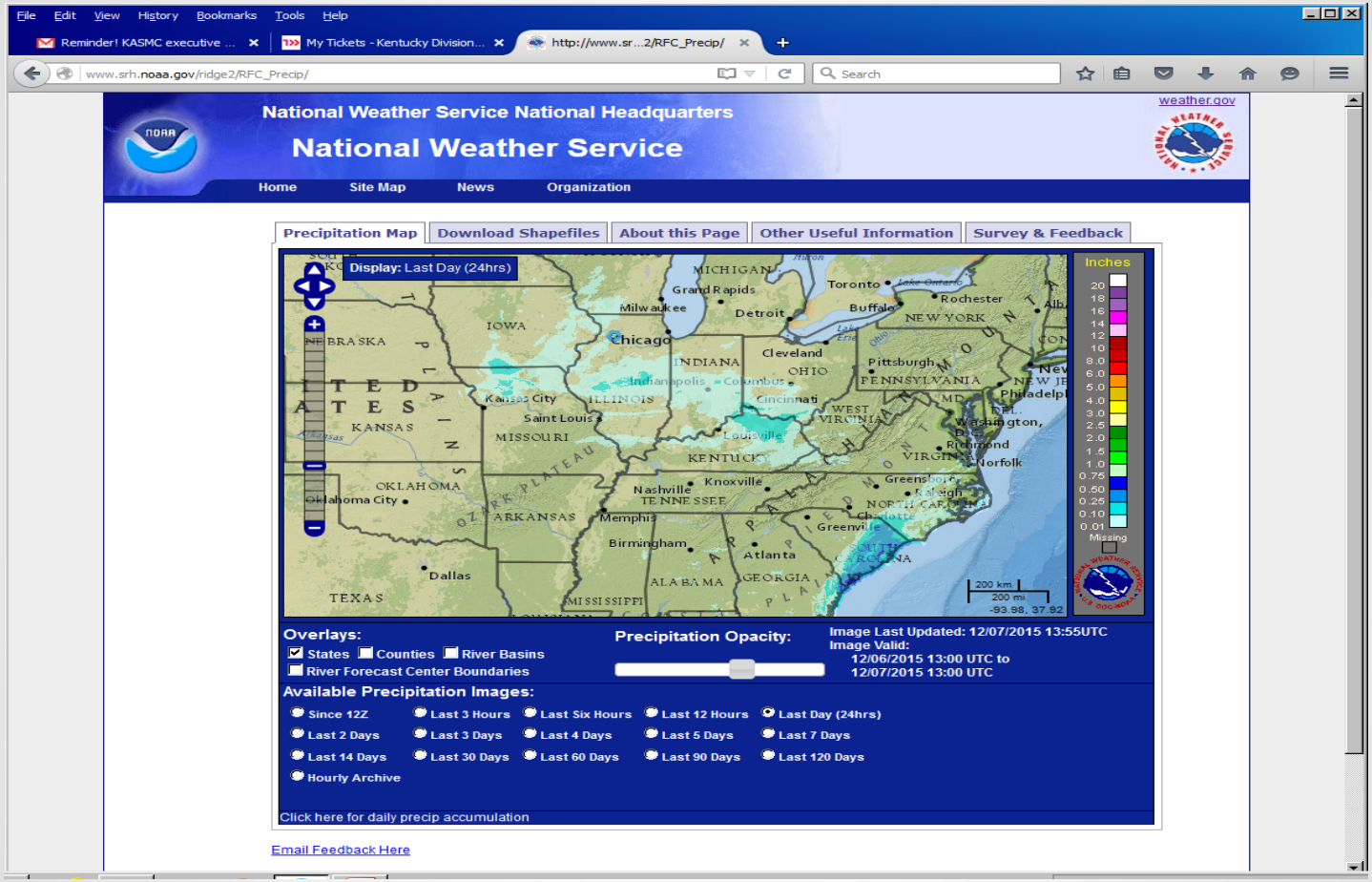


24-hour Grids are available here:

http://water.weather.gov/precip/

Building a Weather-Ready Nation

National Hourly Grids Available



24-hour Grids are available here:

http://www.srh.noaa.gov/ridge2/RFC_Precip/

Flood Risk Increasing!

Historic Crests - Golconda
(1) 62.60 ft on 02/02/1937
(2) 56.89 ft on 05/06/2011
(3) 56.80 ft on 01/01/1913
(4) 54.40 ft on 01/19/1950
(5) 53.58 ft on 03/12/1997
(6) 53.20 ft on 03/15/1945
(7) 52.40 ft on 03/20/1964
(8) 51.60 ft on 01/09/1991
(9) 51.20 ft on 03/08/1979
(10) 51.00 ft on 03/26/1963
(11) 50.70 ft on 04/04/1975
(12) 50.55 ft on 01/16/2005
(13) 50.40 ft on 05/16/1961
(14) 49.70 ft on 03/11/1962
(15) 49.00 ft on 05/11/1983
(16) 48.62 ft on 03/27/2008
(17) 48.60 ft on 03/29/1943
(18) 48.60 ft on 03/20/2015
(19) 48.40 ft on 04/27/1939
(20) 48.10 ft on 04/23/1948

1997-present = 5/20 …5/18 = 0.27

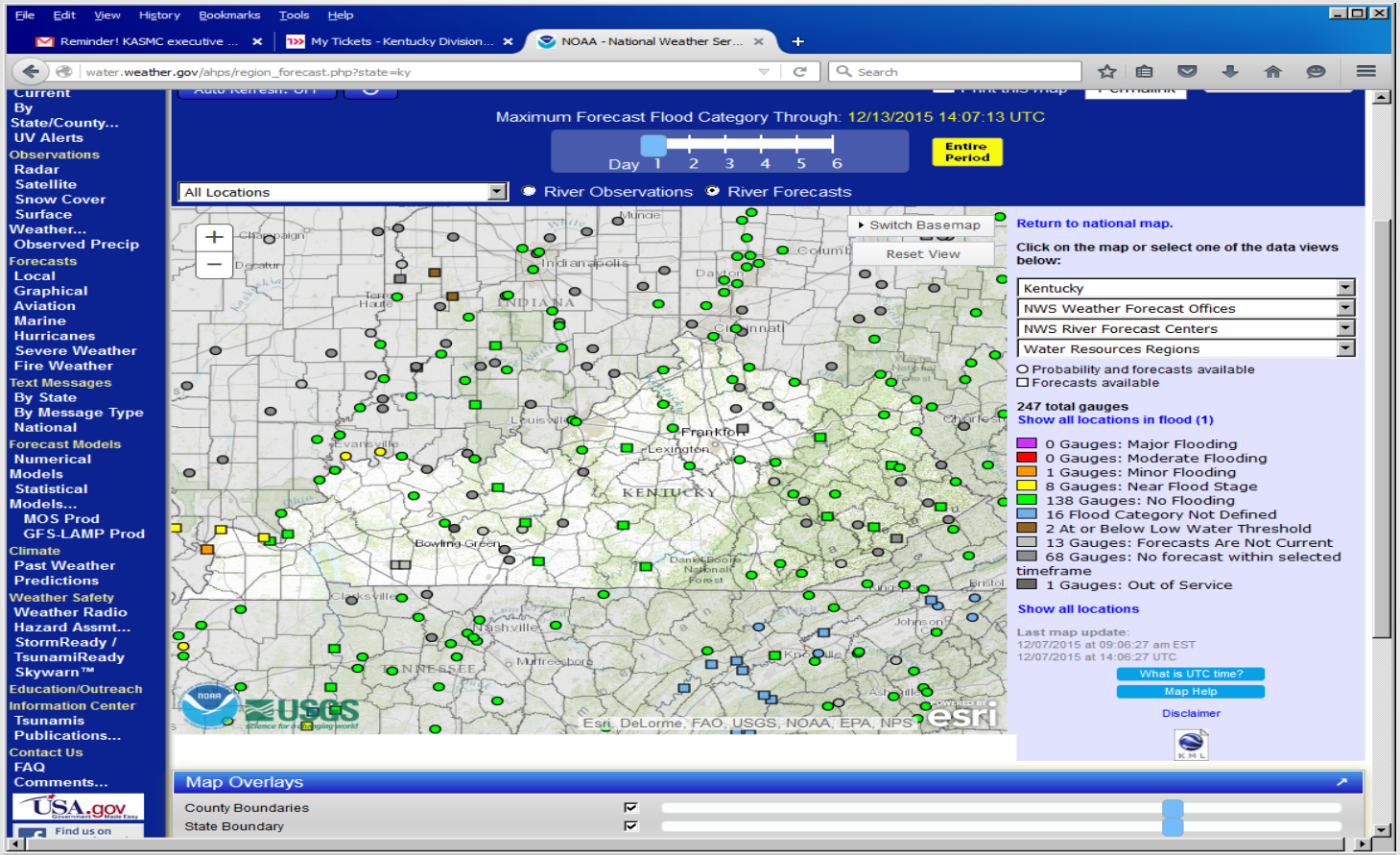
1965-1996 = 4/20 … 4/31 = 0.13

1913-1964 = 11/20 … 11/51 = 0.22

We are returning to big floods of the first half of last century and now exceeding that frequency in top 20 floods on Ohio River!

Partners asking for 16-45 day lead-time on forecasts for high and low flow events on bigger rivers!

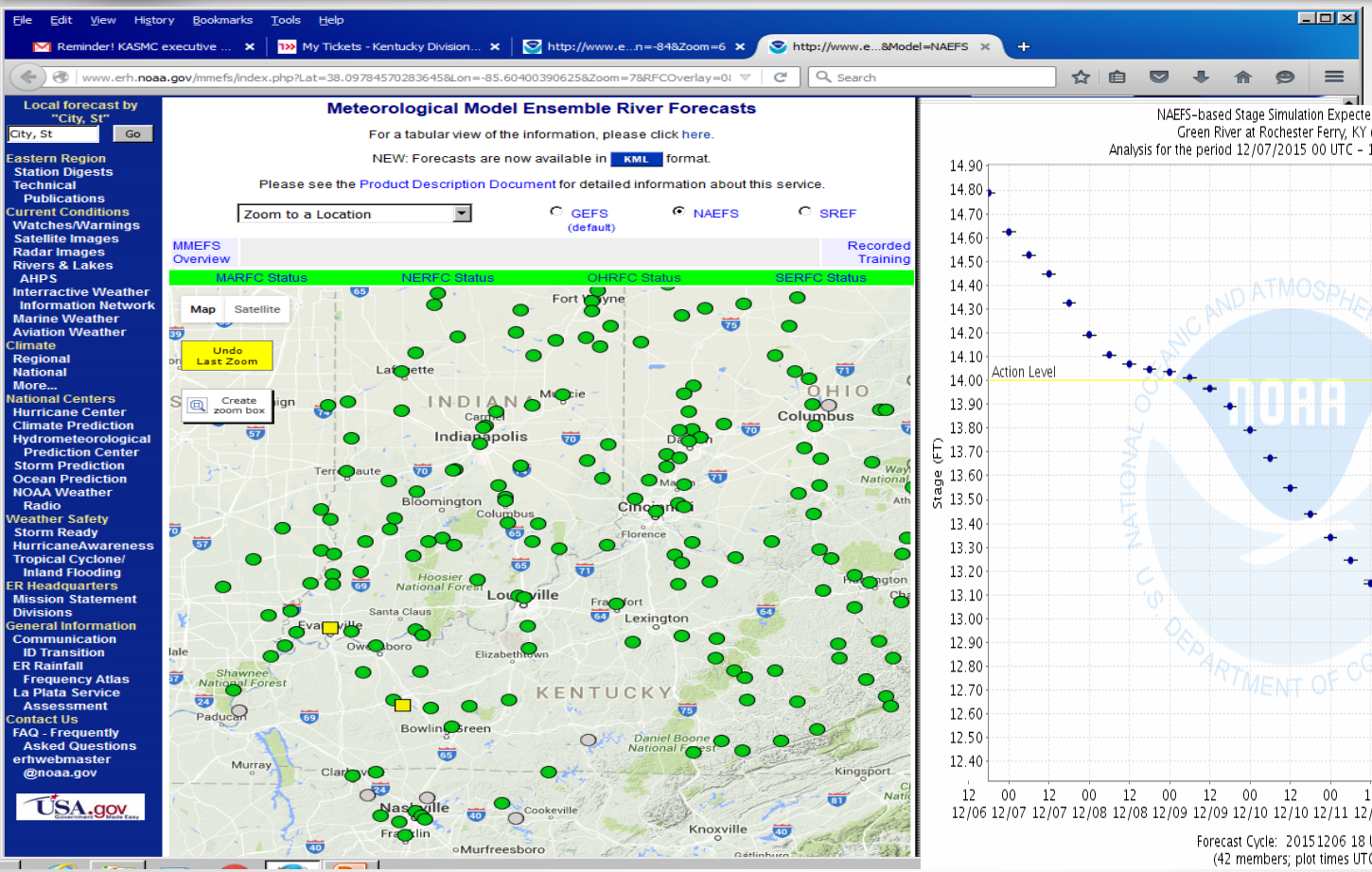
Forecast Flood Risk



Forecast Flood Risk can be found here:

http://water.weather.gov/ahps/region_forecast.php?state=ky

Short-Range Ensemble Forecasts

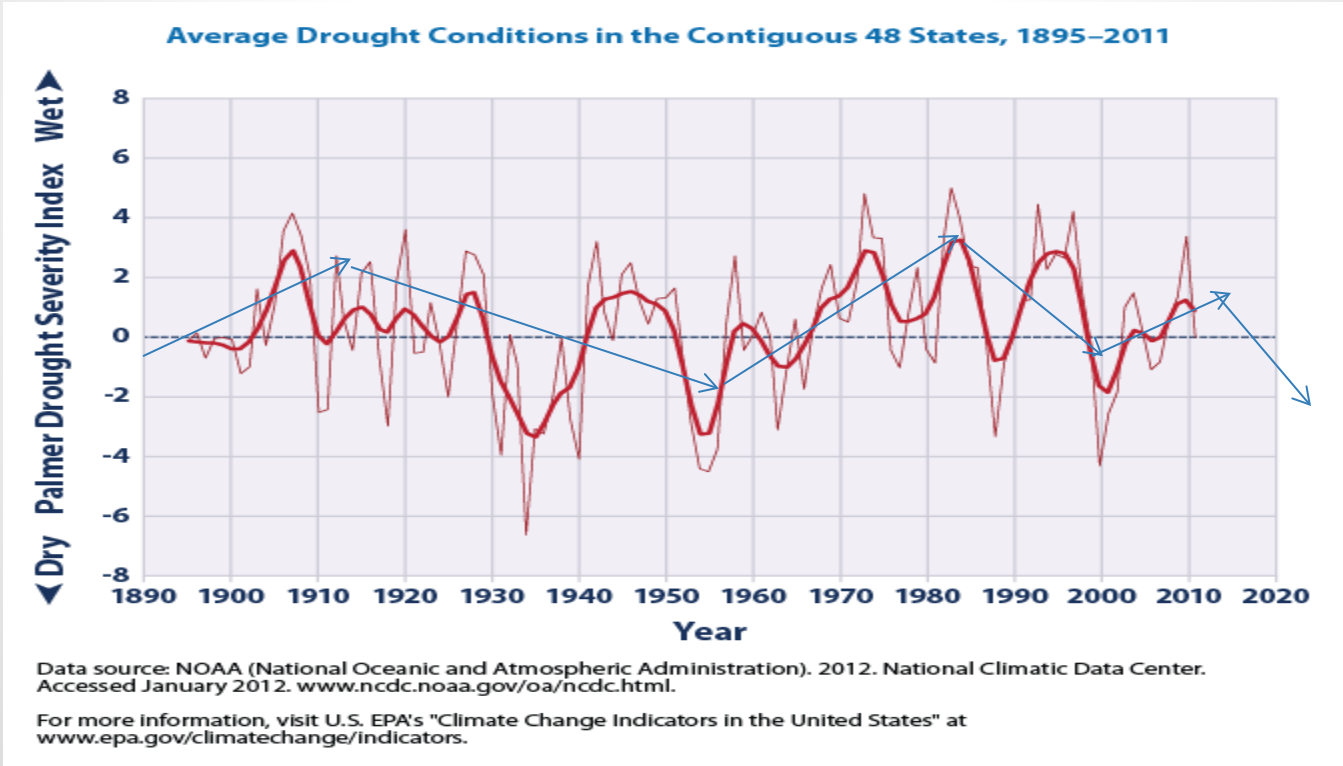


7-day Risk of flood can be found here:

http://www.erh.noaa.gov/mmefs/index.php?Lat=38.09784570283645&Lon=-85.60400390625&Zoom=7&RFCOverlay=0&Refresh=0&Model=NAEFS

Drought Risk

Droughts increased into the 1950s, decreased into the 1990s and are increasing again the opposite of cycle frequency. Risk is increasing again. Can we spot them faster in the Ohio River basin.



30-90 Day Drought Risk

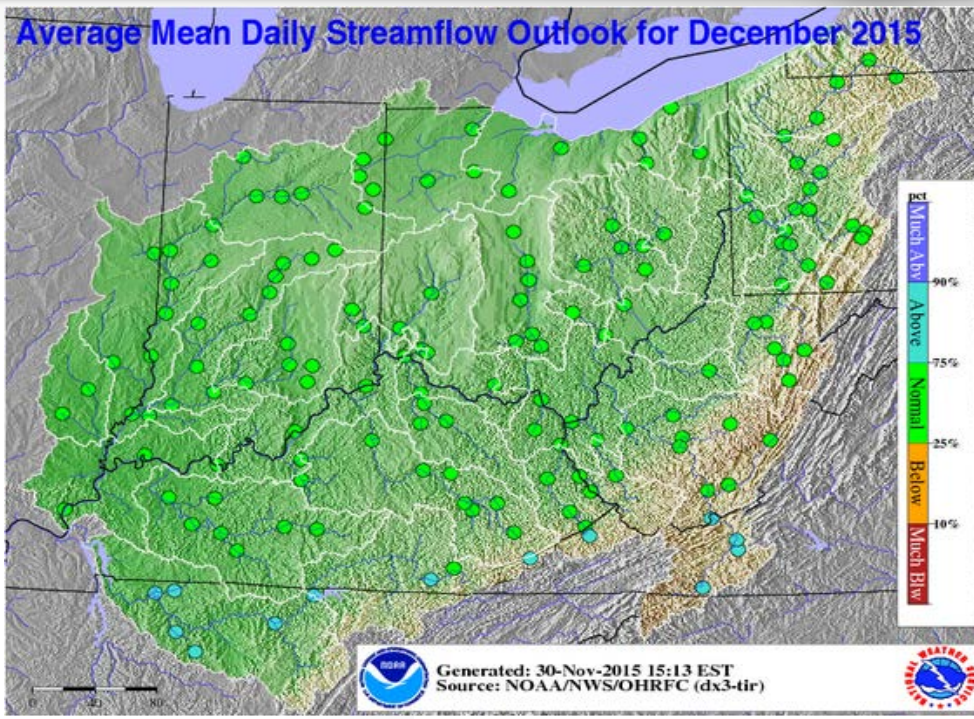
USGS Percentiles are used to forecast the next 3 months of expected flows in the Ohio Valley including Kentucky.

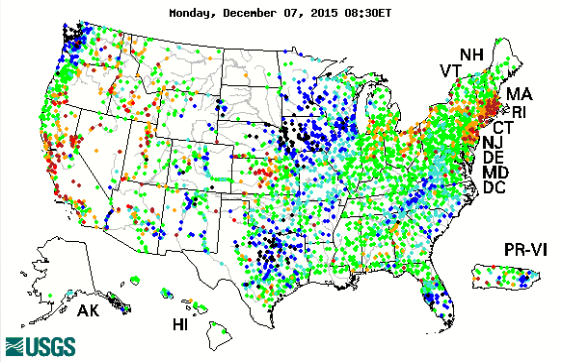
For December we are forecasting near normal to slightly elevated flows across Kentucky.

Look for blues for flood risk and orange/reds for drought risk coming

http://www.weather.gov/ohrfc/WRO

http://www.erh.noaa.gov/ohrfc/HAS/text/wro.txt





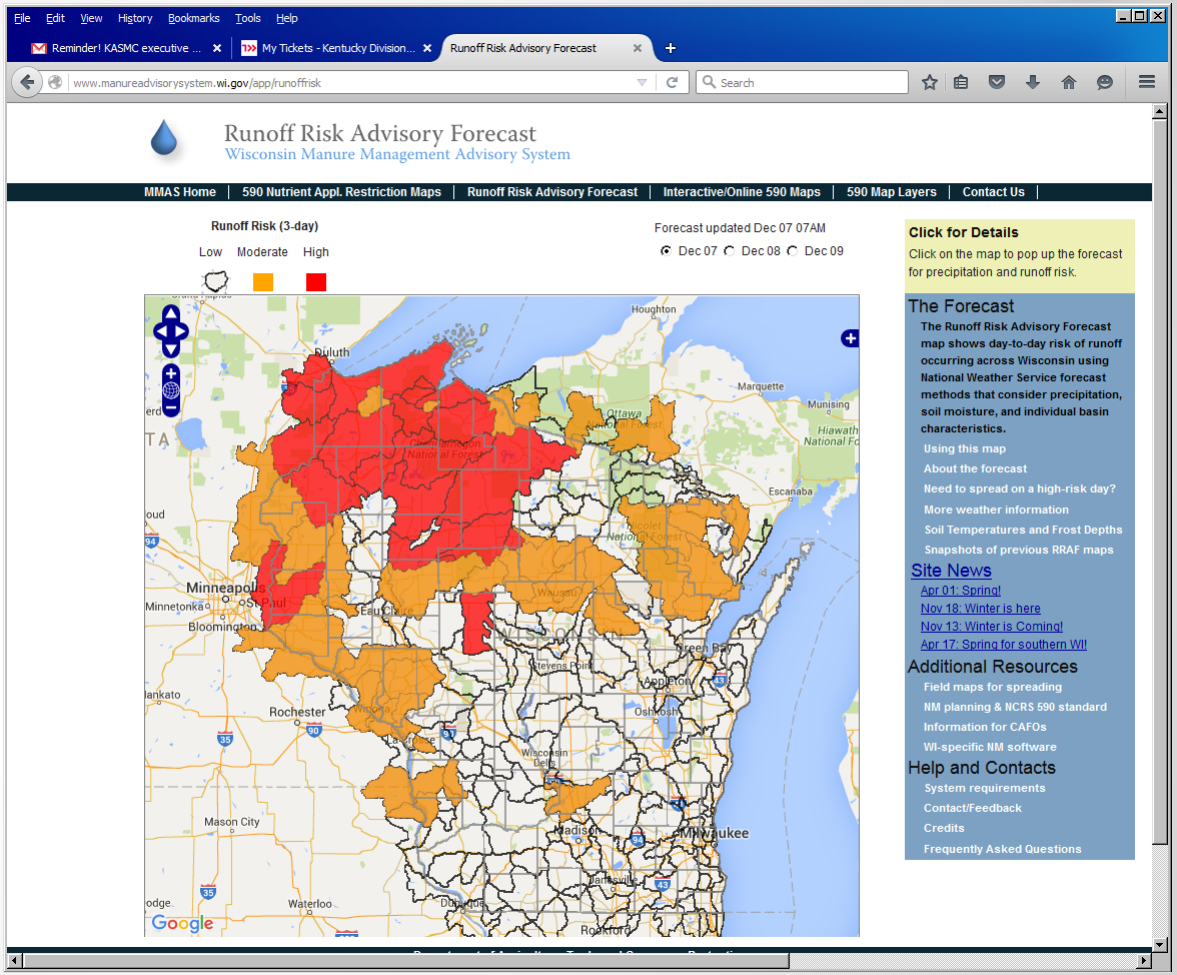
Runoff Risk – NEW!

Basin Runoff system expanding to Ohio, Indiana, Michigan and Minnesota.

Kentucky Interest? Assume yes

Calibrated to past events

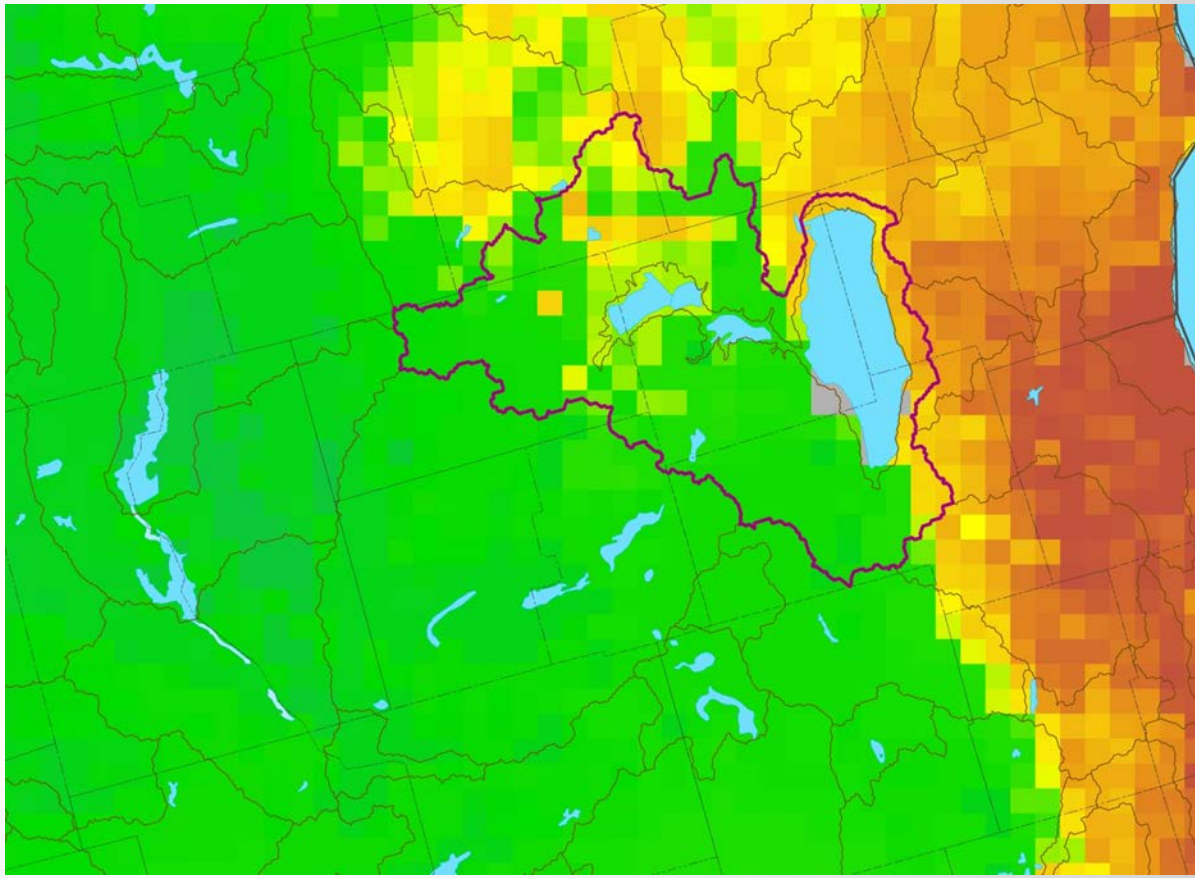
Data by NWS, supported by states



http://www.manureadvisorysystem.wi.gov/app/runoffrisk

Runoff Risk – NEW!

4 km high resolution runoff forecasting based on observed and the next 1-5 days of future rainfall



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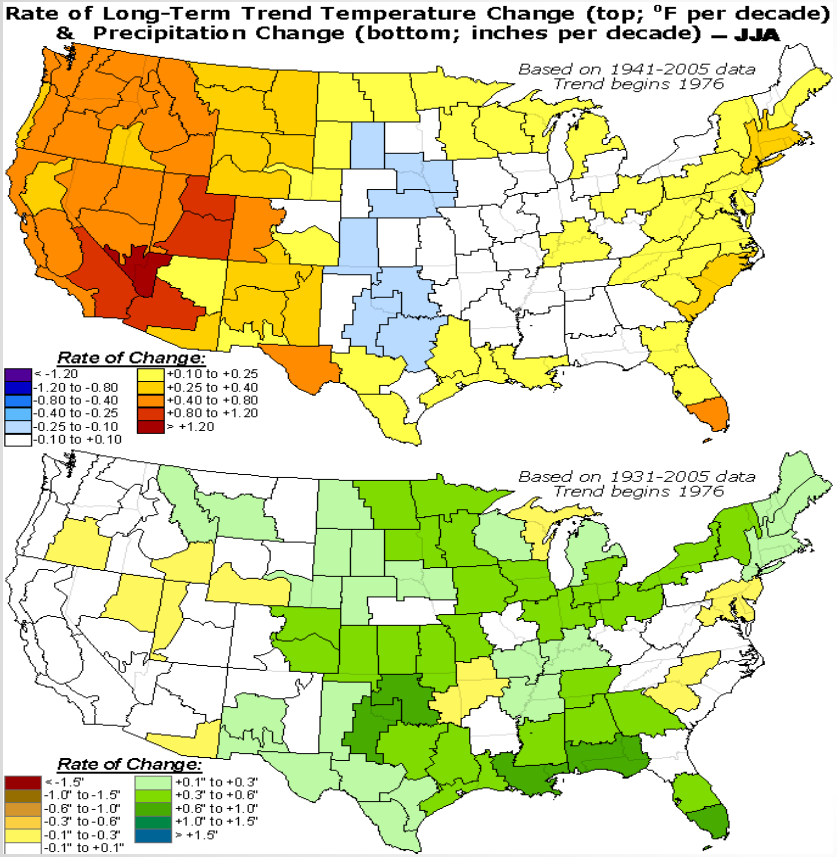
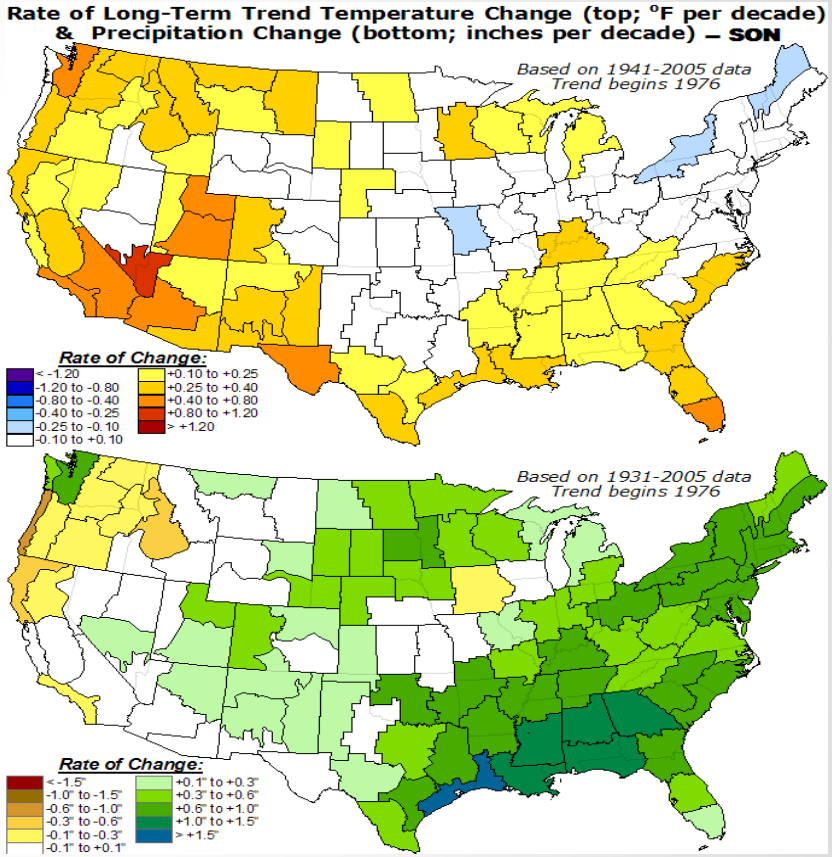
Runoff Risk: What is it?

- Decision support tool for agricultural nutrient applicators
- Identifies the threat of significant runoff in both space and time
- Guidance produced multiple times daily based on NWS weather-hydrologic modeling 10 days into future
- Tool is developed in collaboration with states & partners to produce runoff risk incorporating state specific guidelines
- States make an investment (time/website) and are the tool owner and presenter to public
- Fulfills strong desire/need for web/mobile based decision support tool for short-term application timing

Precipitation Challenges

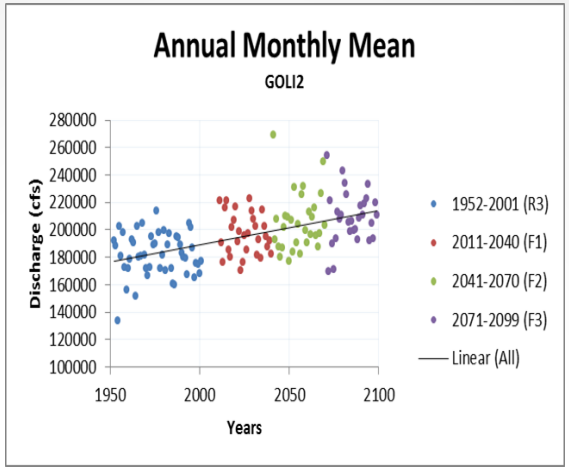


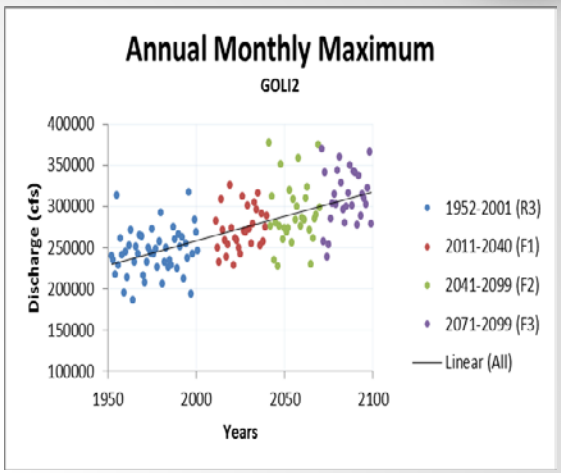


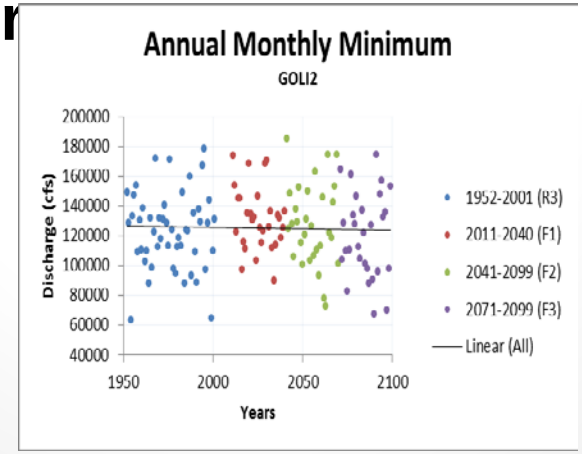
Greatest wetting low flow season challenging our models (calibrated to spring) and autumn harvest

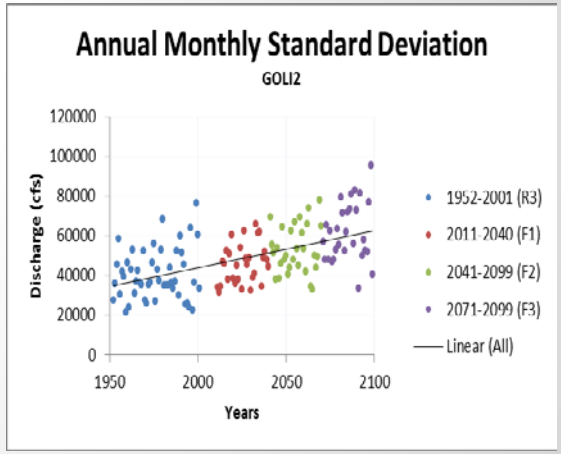
Climate Change Project

USACE/USGS/NWS/ OHRFC have partnered with others to produce Climate Change for hydrology in Ohio River Basin Report. Report due out in 2016 by USACE.





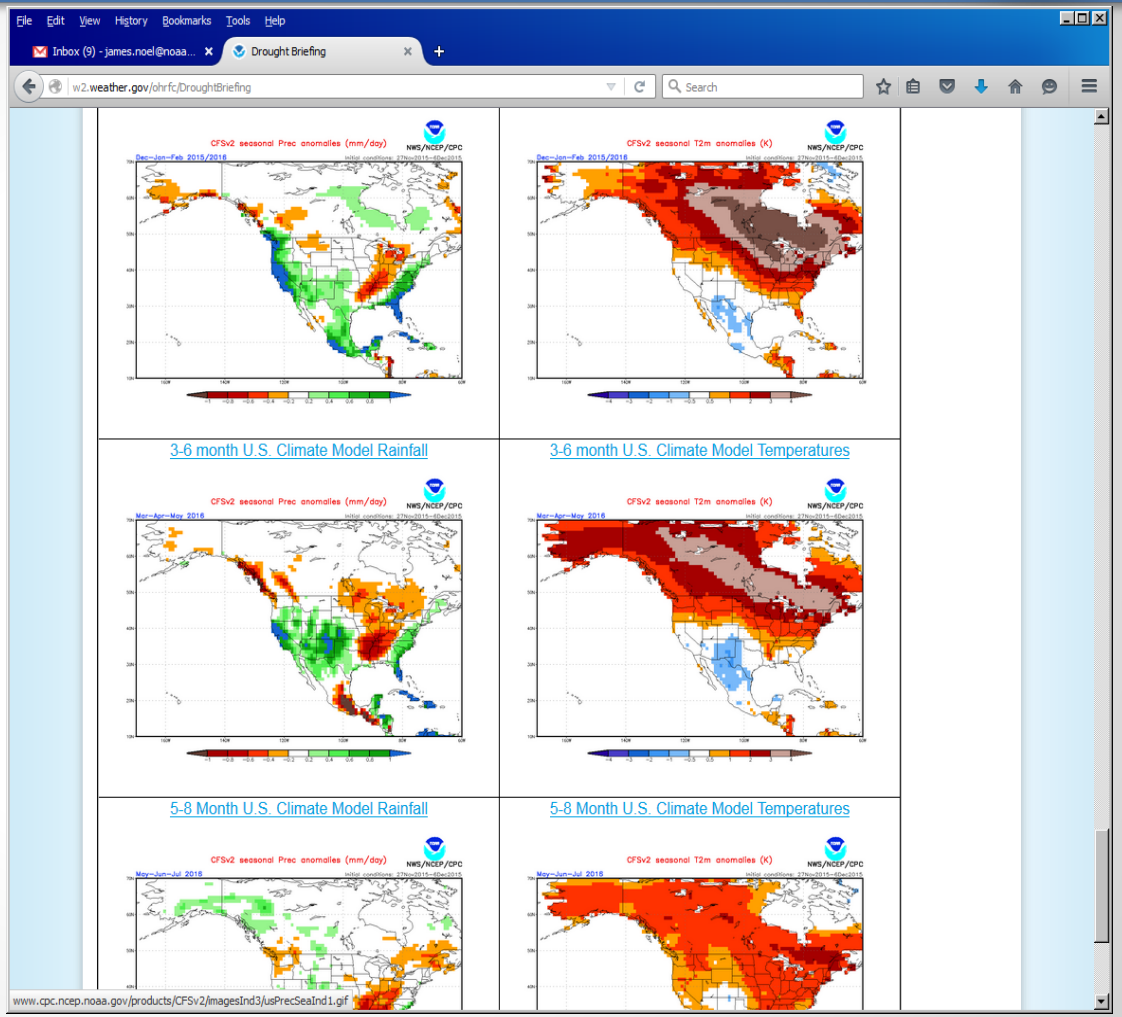




Briefings

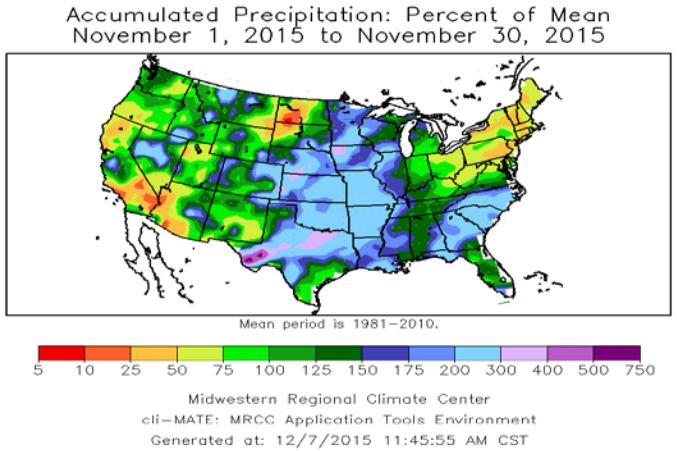
Flood, Drought and Seasonal Self Briefing Pages are available any time

Weakening strong El Nino during winter and spring and rapid rate of change will mean we will need to monitor possible dryness developing.



http://www.weather.gov/ohrfc/Briefings

El Nino Peaking



Even major El Nino events fall into two categories for many reasons.